

# Intro to Air: Air Permitting Basics



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# Federal Rules – Air Permitting

40 CFR Part 60 - New Source Performance Standards

40 CFR Parts 61/63 - National Emissions Standards for Hazardous Air Pollutants

40 CFR Parts 51/52 - New Source Review

40 CFR Parts 72-78 - Acid Rain Program

40 CFR Parts 70/71 - Title V Permitting Program

United States Code Title 42, Chapter 85 (Clean Air Act) defines US EPA's responsibilities to protect & improve nation's air quality



# US EPA Regulated Air Emissions – Background

## National Research & Development Program

- ▶ US EPA has broad research authority
- ▶ Regulated pollutants subject to (and do) change as pollution problems emerge over time
- ▶ Ambient air - status of atmosphere

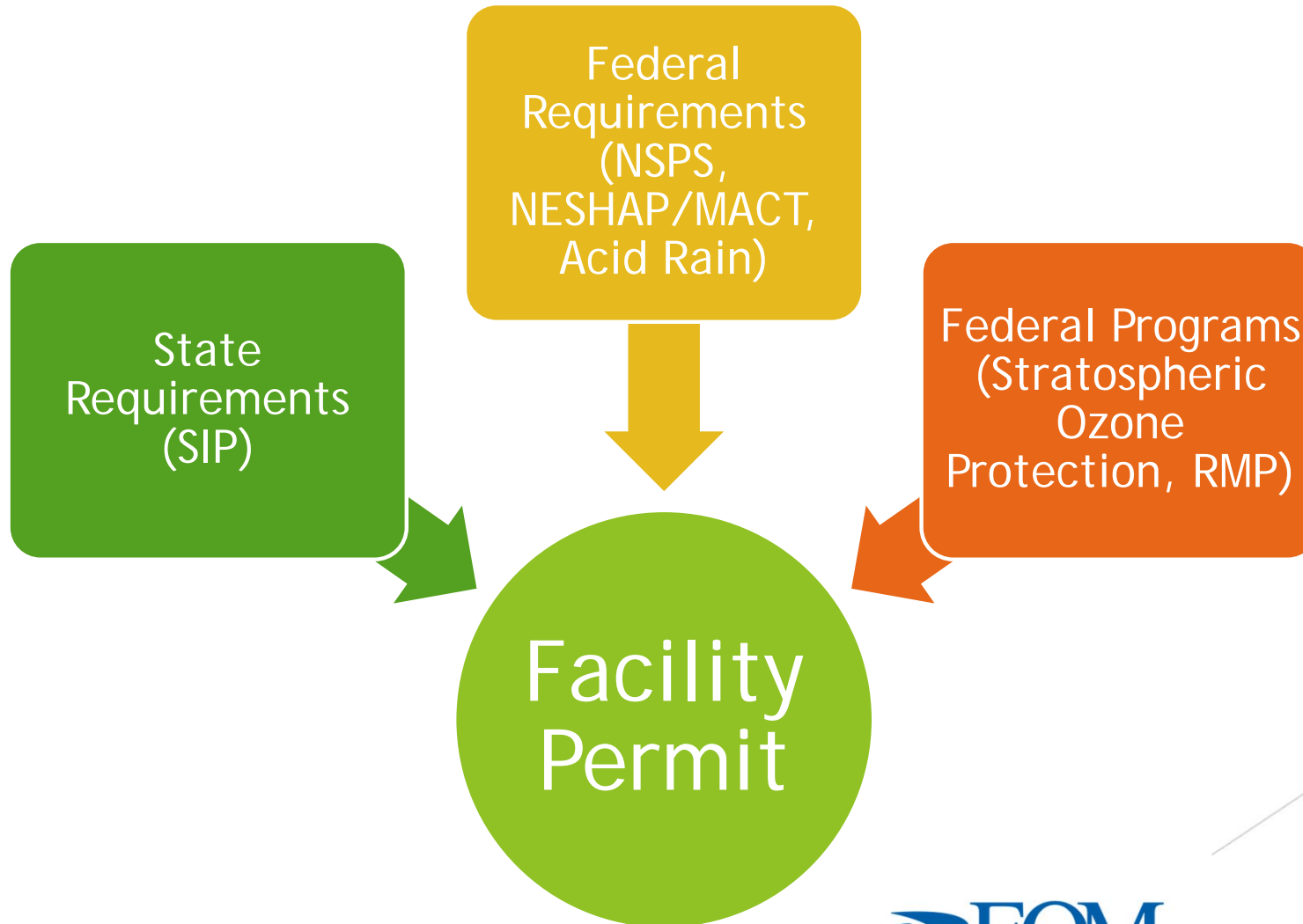
## Sources

- ▶ Moving Sources - aircraft, motor vehicles
- ▶ Stationary Source Emissions - grouped into Industry sector categories

## Emissions

- ▶ National Ambient Air Quality Standards
  - ▶ Established to protect public health (Primary) and public welfare/environment (Secondary)
  - ▶ Criteria Air Pollutants
    - ▶ CO, NO<sub>2</sub>, O<sub>3</sub> (VOCs), particulate matter, SO<sub>2</sub>, lead
- ▶ Other pollutants
  - ▶ National Emission Standards for Hazardous Air Pollutants
  - ▶ Acid rain, emissions that deplete stratospheric ozone layer, regional haze, noise pollution

# Putting it All Together



# Permit Sequence

- ▶ Construction Permit
  - ▶ Must obtain prior to starting construction
    - ▶ Construction
    - ▶ Permit to Install (PTI)
    - ▶ Permit to Install and Operate (PTIO)
- ▶ Operating Permit

# Construction Activities Allowed/Not Allowed Prior to Permit Receipt

- ▶ Allowed activities - depends on type of construction permit review needed; in general
  - ▶ Clearing and grading of site
  - ▶ Demo and removal of existing equipment/buildings
  - ▶ Installation of buildings or structures not containing air contaminant sources
  - ▶ Excavating building footers, pilings, foundations, pads, and platforms, etc.; installing concrete forms and reinforcing bar for any concrete footers, pilings, foundations, pads and platforms, etc. (note: no pouring of concrete is allowed)
  - ▶ Installing temporary utilities for site construction including electricity, water, gas, communication and sanitary (note: not utilities that will be connected to emission unit)
- ▶ Not allowed activities, in general:
  - ▶ Pouring of concrete for foundation or footers
  - ▶ No utilities run that will be connected to emission units
  - ▶ Equipment delivered to site

# Type of Operating Permits:

- ▶ New Source Review Construction Permits - LARGEST
  - ▶ PSD Major Source/Major Modification Thresholds
    - ▶ 100 tpy for any listed source (list of 28) category
    - ▶ 250 tpy for any other source category
    - ▶ Pollutant-specific thresholds for modifications
  - ▶ NNSR Major Source/Major Modification Thresholds
    - ▶ 100 tpy
    - ▶ Pollutant-specific thresholds for modifications
- ▶ Title V Operating Permit - LARGE
  - ▶ Major source thresholds
    - ▶ 100 tpy for any air regulated pollutant (lower for non-attainment areas)
    - ▶ 10 tpy for a single HAP or 25 tpy for any combination of HAPs
  - ▶ Other triggers = NSR Permit, Acid Rain Program, NSPS standards, most NESHAP/MACT standards



# Type of Operating Permits (cont.):

- ▶ Federally Enforceable State Operating Permit (FESOP) - MEDIUM
  - ▶ For synthetic minor sources
  - ▶ Site has taken a federally enforceable restriction (such as operating restrictions or emission limitations) to maintain potential emissions less than Title V major source thresholds
- ▶ State Operating Permit (PTI/PTO/PTIO) - SMALL
  - ▶ For natural minor sources
- ▶ Everything Else (Registration, Permit-by-Rule, General Permit)
  - ▶ Emergency Generator
  - ▶ Roadway Emissions
- ▶ Exemptions



# Exemptions

- ▶ Can this project fall under an exemption?
  - ▶ Combustion unit < 10 mmBtu/hr
  - ▶ R&D
  - ▶ De Minimus
    - ▶ <10 lb/day of criteria pollutants
  - ▶ State Specific
  
- ▶ MAKE SURE YOU DOCUMENT YOUR DECISION TREE

# Types of Permits by State

## OH

- Construction (PTI)
- PTIO
- FEPTIO
- Title V
- PSD/NNSR

## KY

- Construction
- Registration
- State Origin
- Title V
- PSD/NNSR

## IN

- Construction
- Minor Source
- FESOP
- Title V
- PSD/NNSR

# Defining a Project



Understand the Emissions Units within Your Project



Consideration of Potential Project Related Emissions



Project Aggregation

# Emission Unit

- ▶ Think of the emissions unit as a race car.
  - ▶ If all you have to do is press the accelerator down to make your race car run faster, without making any changes to your car, you are allowed to make it go faster without a permit modification (as long as the emission unit was originally permitted to run at top speed).
  - ▶ If you need to make a pit stop to make physical changes to the original design of the race care, you have now modified the race car and are required to evaluate whether a permit modification is required.



# What is an Emission Unit

## ▶ Emissions unit

- ▶ Any part of a stationary source that emits or has the potential to emit any pollutant subject to regulations under CAA

## ▶ Examples:

- Boilers
- Steam generators
- Combustion turbines
- Paint spray booths



# Individual Emissions Units vs. Grouping Emissions Units

- ▶ Example of Individual vs. Grouped units
  - Individual Emissions Unit
    - ▶ Only need to consider the modified/affected unit 😊
    - ▶ Each machine will have its own limits (e.g., emissions, throughput, etc.) 😞
  - Grouping Units
    - ▶ Group limits 😊
    - ▶ Modify one unit, modify them all 😞



# Project Aggregation

- ▶ A Facility cannot break up a project into smaller projects to avoid permitting implications
- ▶ U.S. EPA Guidance - 3/30/2019 Federal Register
  - ← Projects within the last several years must be reviewed for project aggregation
  - ← Review your internal documentation of project scope
  - ← Keep a project aggregation determination justification on record





# Project Aggregation Example

When you look at these 3 pictures what do you see, a diaper?

A diaper is just a diaper... right?

NO!



# Defined your project... Now what?

- ▶ Determine what type of permit is needed:

New Construction

Modification of existing equipment

Permit By Rule

Exempt



# Permit Process



Application

Agency discussions



Draft

Agency discussions



Review/Public  
Comment

Facility review  
State and/or  
Federal dependent  
on type of  
permitting  
Agency discussions



Final



# Permitting Application Needs

- ▶ What do you need
  - ▶ Facility Contact
    - ▶ The person who can answer questions about the application
  - ▶ Equipment Change Information
    - ▶ New or modified equipment information
      - ▶ Process Flow Diagram
      - ▶ Potential to Emit (PTE) Calculations
  - ▶ Facility-wide information
    - ▶ How does that project affect the facility?
      - ▶ Location
      - ▶ Facility-wide PTE

# Equipment Change Information

- ▶ What is new equipment and what will be produced?
  - ▶ What are the criteria pollutants looking at?
    - ▶ PM, VOC, Nox??
  - ▶ What are raw materials?
- ▶ Where will equipment go?
  - ▶ New process all together?
  - ▶ Addition to an existing process?
  - ▶ New building?

# PTE Calculations

- ▶ Need emissions of all criteria pollutants and/or HAPs
  - ▶ Project/Emission unit info
    - ▶ Throughputs (24/7)
    - ▶ Emission factors
      - ▶ AP-42
      - ▶ Manufacturers Specs
      - ▶ Site specific or company specific
  - ▶ Facility Wide
    - ▶ Existing equipment
      - ▶ Include registration and PBR sources
    - ▶ Does this addition bump you to next permitting level?

# Where to Get Info

- ▶ Plant Engineer
  - ▶ Layout of equipment
  - ▶ Process flow diagram
  - ▶ Understanding how line will operate / description
  - ▶ What the lines full capacity is
  - ▶ Any bottlenecking?
- ▶ Planning Coordinator
  - ▶ Projected volume/throughput rates
  - ▶ Will this be a scale up?

# Where to Get Info (cont.)

- ▶ Material & Process Manager
  - ▶ Materials that may be used
  - ▶ SDSs of the materials
  - ▶ Technical Data Sheets (TDSs) for materials
  - ▶ Throughputs of materials/Application rates

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
COATING SUPPLIER  
ENVIRONMENTAL DATA SHEET

Coating Manufacturer: XXXXXXXXXX  
Coating Code Number: XXXXXXXXXX

1.	Coating Density Standard W/Gal Cup	10.96 lb/gal	1.32 kg/l
2.	Solvent System (Volatiles) Calculated Density	7.45 lb/gal	0.89 kg/l
3.	Organic Solvent Density:	7.45 lb/gal	0.89 kg/l
4.	Coating Solids (Non Volatiles): ASTM 2369 (EPA Method 24)	a. 50.6 Weight Percent b. 27.7 Volume Percent	
5.	Total Volatiles (H2O Included): ASTM 2369 (EPA Method 24)	a. 49.4 Weight Percent b. 72.7 Volume Percent	
6.	Total Exempt Solvent:	a. 0.0 Weight Percent b. 0.0 Volume Percent	
7.	Total Organic Volatiles (Less H2O)	a. 49.4 Weight Percent b. 72.7 Volume Percent	
8.	Coating Water Content:		
	a. Water content as Charged:	a. 0.0 Weight Percent	
	b. Calculated:	b. 0.0 Volume Percent	
9.	VOC Content,* (Coating Less Water & Exempt Solvent) (Solids)	5.4 lb/gal 19.8 lb/gal	0.65 kg/l 2.38 kg/l

\*Note: The VOC reported is based on laboratory or small production quantities. Diluting the coating with organic solvents at the point of application will alter the VOC level. Consult your Valpar Sales Representative for additional information in such cases.

4/4/2017 4.4.PKG.F7.REV.2

## SAFETY DATA SHEET

Revision date: 05-Oct-2016      Version: 3      Supersedes Date: 30-Dec-2015

**Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product identifier:**  
Product Code: 31502EA

**Product Name:** XXXXXXXXXX

**Other means of identification:**  
No information available

**Recommended use of the chemical and restrictions on use:**  
Paint, coatings

**Details of the supplier of the safety data sheet:**  
See section 16 for more information

The Valpar Corporation  
PO Box 1461  
Minneapolis, MN 55440

**E-mail address:** [media@valpar.com](mailto:media@valpar.com)

**Emergency telephone number:**  
United States of America: 1-800-345-5732  
American Samoa, Guam, Northern Mariana Islands, Puerto Rico, U.S. Virgin Islands: 1-800-255-2024

**Section 2: HAZARDS IDENTIFICATION**

**Classification:**

Skin corrosion/irritation	Category 2
Eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable liquids	Category 2

**Label elements:**

Product Code 31502EA      Page: 1/5      AGHS - USA OSHA SDS

# Where to Get Info

- ▶ Emission Factors
  - ▶ Site Specific
  - ▶ Industry/Process Specific
  - ▶ AP-42
    - ▶ Combustion
    - ▶ Process information (can use similar if not exact)

<https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors>



# Complete Application

Make sure have ALL forms needed

- General forms and unit specific forms

All supplemental information

- PTE calcs
- Maps
- Process Flow Diagrams
- Technical support document

# State Sites

- ▶ Ohio

<https://www.epa.ohio.gov/dapc/permits/permits>

- ▶ Kentucky

<https://eec.ky.gov/Environmental-Protection/Air/Pages/Air-Permitting.aspx>

- ▶ Indiana

<https://www.in.gov/idem/airquality/2495.htm>

# Complete Application Package



Make sure RO signs application



Read submittal instructions

Online (Ohio eBiz)  
Emailed  
Hard copy (how many copies)  
Confidential vs Non-confidential versions



Pay attention to additional requirements for application posting

IN requires it to be posted in local library

# Permitting Timelines

- ▶ Application review timelines
  - ▶ Ohio (general 2 - 6 months)
  - ▶ Kentucky
  - ▶ Indiana (regulatory time between 30 - 270 days)
    - ▶ <https://www.in.gov/idem/airpermit/resources/timeframes-and-fees/>

# Questions?

# Example 1



Steam demand at a facility has increased.



Operations informs you they need to install a new boiler to make up for additional demand.



Will this need a permit?

## Example 2

A facility in your company is shutting down. Equipment from that facility is being moved to a 2 sister locations in other states

- Facility 1 has existing lines grouped as one process
- Facility 2 has existing lines permitting individually

Equipment is a metal can forming line which applies a coating to the interior of the can.

Do you need a permit?

## Biographical Information

**Hope Manning, Vice President, Engineering and Consulting  
Environmental Quality Management, Inc.,  
1800 Carillon Boulevard, Cincinnati, Ohio 45240  
513-742-7238 [hmanning@eqm.com](mailto:hmanning@eqm.com)**

Hope has over 16 years of technical and compliance management experience in the environmental field in both consulting and industry. She has been involved in a broad range of programs including air compliance and permitting, NESHAP Boiler GACT compliance, NPDES permitting and compliance, SPCC, and SWPP Plans generation, and EPCRA SARA Title III, Section 312 and 313 reporting, and auditing. Currently Hope leads the Engineering and Consulting group at EQM which is comprised of individuals who have expertise in air, water, SPCC, and EPCRA reporting. She is also the primary environmental auditor for EQM. Prior to her joining EQM in 2015, Hope was the Corporate Environmental Compliance Manager at Darling Ingredients, Inc., and was responsible for environmental compliance to federal, state, and local requirements for over 50 locations in over 15 states. These activities included assisting in minor and major permitting, regulatory compliance, regulatory interpretation, regulatory reporting, permit compliance and internal auditing. Prior to her time at Darling Ingredients, Inc., Hope was the Water Quality Specialist for The Seminole Tribe of Florida. She was responsible for the water quality program for all surface waters on the Seminole Tribe of Florida reservation lands. Because the Seminole Tribe of Florida is a federally recognized Indian Tribe, she dealt directly with USEPA Region 4 personnel on behalf of the Seminole program.

Hope holds a Bachelor of Science Degree in Chemical Engineering from The University of Cincinnati.

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**Heidi Reeb, Health Safety & Environment Leader  
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Heidi has over 29 years of R&D experience in the Household Care and the Baby, Feminine & Family Care organizations at P&G. She has a broad range of experience in the formulation and development of household care products to delight consumers and, at the same time, meet regulatory requirements to make antimicrobial claims. She is the Global Core Competency Owner for Biological Materials Control, and is qualified in Industrial Hygiene & Safety. Currently Heidi leads the Environmental program at the Winton Hill Business Center and Fabric & Home Care Innovation Center. She manages programs that include Air Emissions, Solid Waste, Site Water Systems, Spill Protection and Other areas such as SARA reporting and Noise control. Activities include assisting in various construction, remodeling and building demolition projects; regulatory compliance and reporting; internal auditing; and internal safety training.

Heidi holds a Bachelor of Arts Degree in Microbiology from Miami University, Ohio.